EPI-3601S

Wireless LAN PCI Adapter

(802.11g & 802.11b up to 108 Mbps)

User Manual

Version: 1.2

TABLE OF CONTENTS

1   Introduction

EnGenius EPI-3601S Wireless LAN PCI Adapter compliant with IEEE802.11g, adopts "Super G" and "Extended Range" WLAN transmission technologies, resulting in transmission speeds of up to 108M, transmission distance is 2-3 times that of the normal 11b, 11g products, transmission range extended to 4-9 times. It provides multiple security options with 64/128/152-bit WEP Encryption, WPA, IEEE802.1X, TKIP and AES, which provides super-safe data communication abilities.

With strong firewall, EPI-3601S features effective security to protect wireless network from intruders. With external antenna, it can fit various operation environments and let the user connect to the Wireless network effortlessly. EPI-3601S also supports Seamless Roaming compatible with other 11b, 11g WLAN equipments.

2 Features

Features	Benefits
2.4GHz IEEE802.11b/g standard	Fully interoperable with IEEE802.11/b/g compliant products.
High Speed Data Rate up to 108Mbps*	Capable of handling heavy data payloads such as MPEG video streaming
802.11i security specifications, provides Advanced Encryption Standard (AES), Temporal Key Integrity Protocol (TKIP), IEEE802.1x client	Enhances authentication and security
Site Survey Utility	Allows users to browser the available active access points which users can connect
802.11e Standard Support	Wireless Multimedia Enhancements Quality of Service support (QoS)
Seamless roaming	Full mobility
Supports eXtended Range technology	Up to 9 times than the range of normal wireless products.

* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

3 Package Contents

Open the package carefully, and make sure that none of the items listed below are missing. Do not discard the packing materials, in case of return; the unit must be shipped back in its original package.

➤ One EPI-3601S Wireless LAN PCI card
➤ One Screwable Antenna
➤ One CD-ROM with User's Manual, Configuration utility & Drivers

Green color LED	Description
LINK	Blinks when active connection is available else remains switched OFF

4 System Requirements

To begin using the WLAN PCI Adapter, your PC/Notebook must meet the following minimum requirements:

- ➤ Operating System – Microsoft Windows XP/2000
- ➤ PCI socket x 1 (free to use socket)
- ➤ 256MB RAM memory or higher
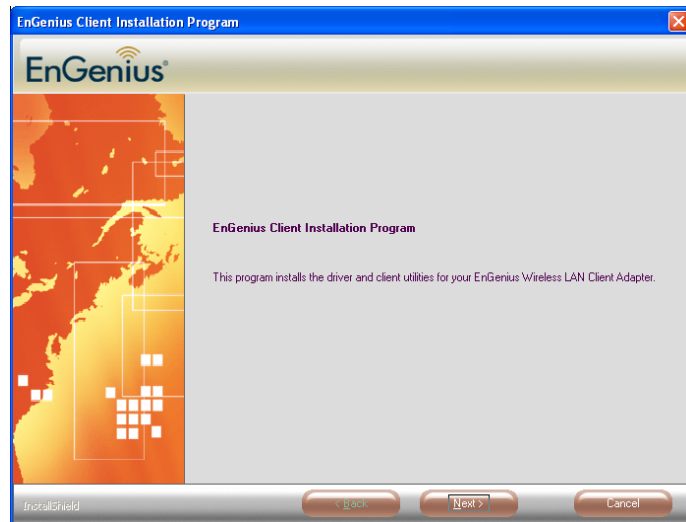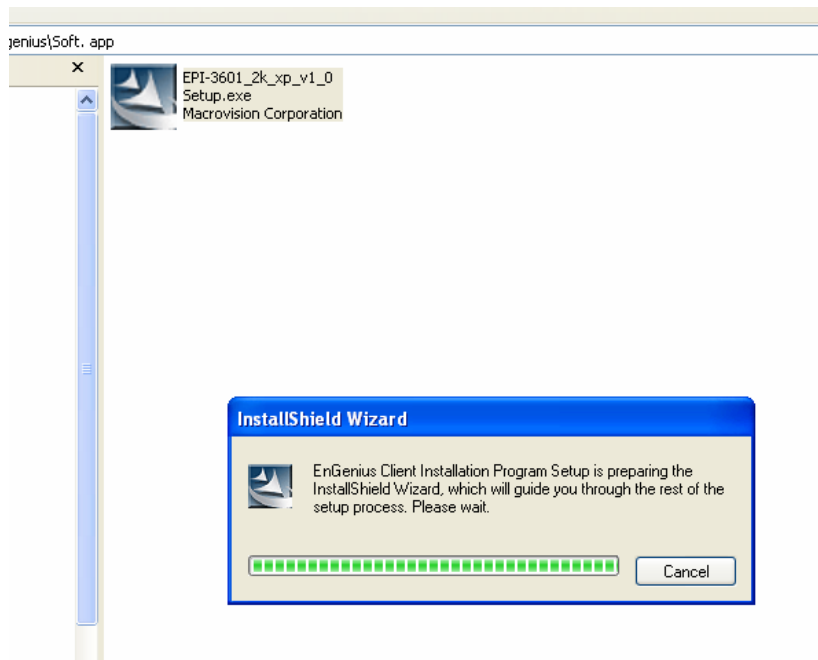- ➤ 750MHz CPU or higher configuration

5 Installation

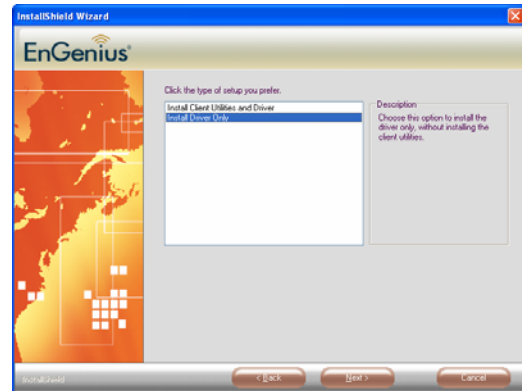Important: Install the WLAN Adapter utilities before inserting the WLAN Adapter into your computer.

Insert the support CD into your optical drive. In the CD drive folder, you will see the following file.

Click open the file and you can briefly see the following…

Click **next** to install or click **cancel** to terminate installation.
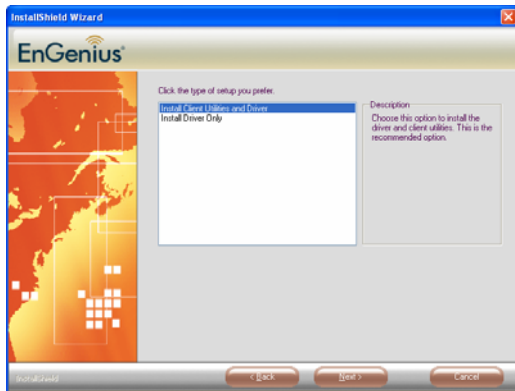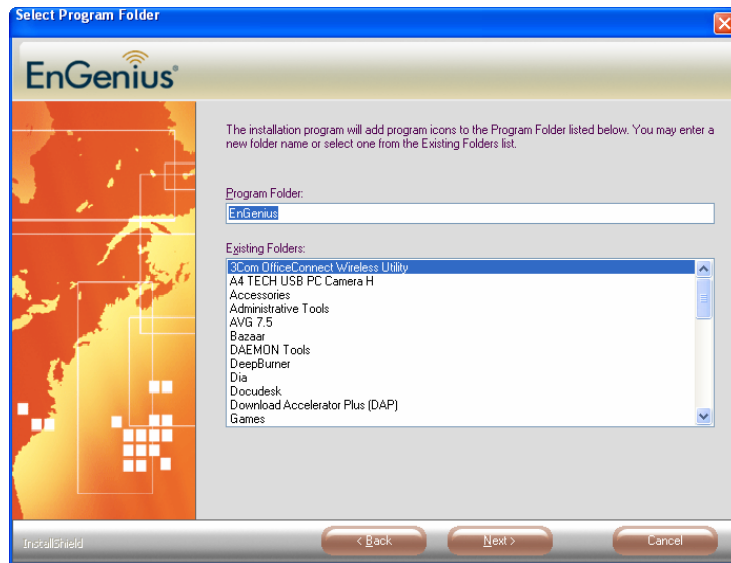
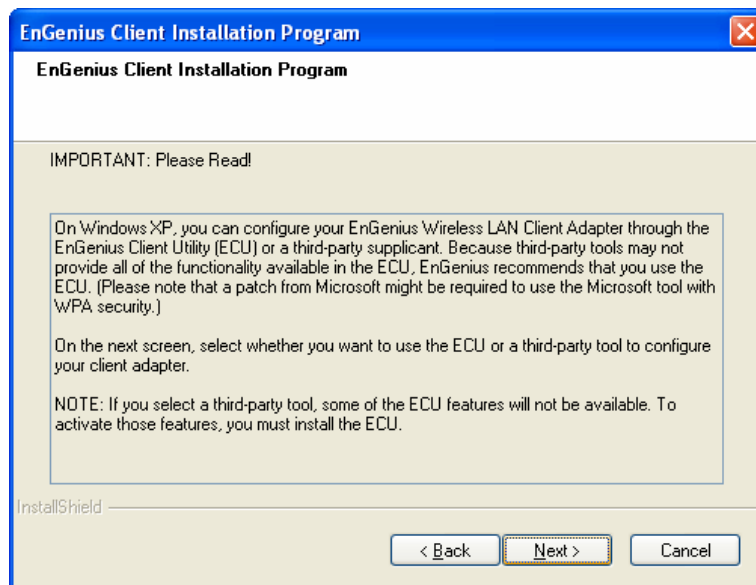Two options are available for installation. Choose one of them and click **Next**

1.   EnGenius Configuration Utility + driver.
2.   Driver only.
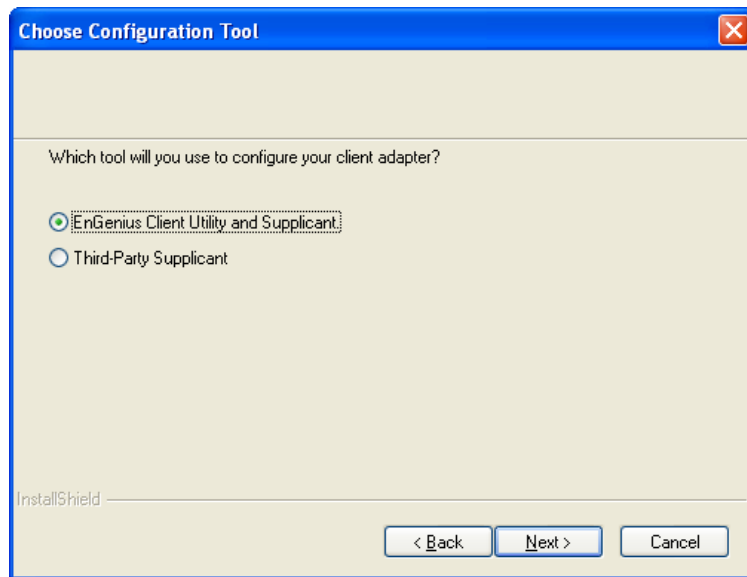

Choose location to install and click **Next.**

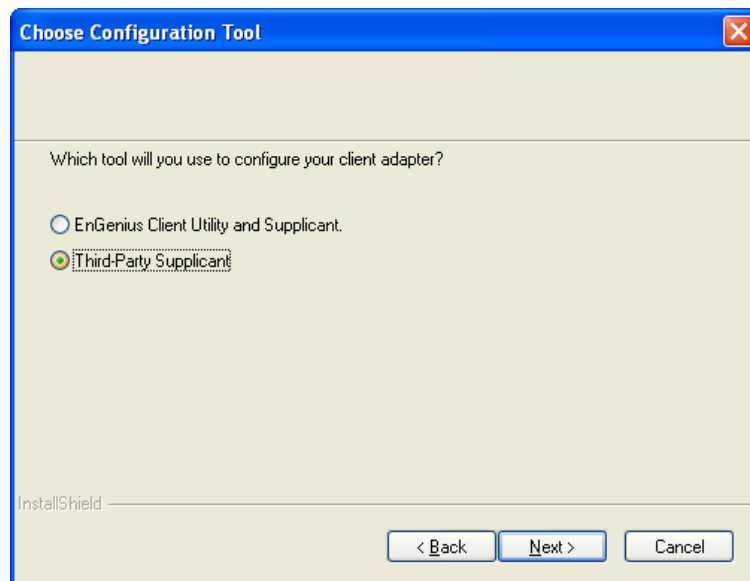Choose name for program folder to create shortcuts. Click **Next**.

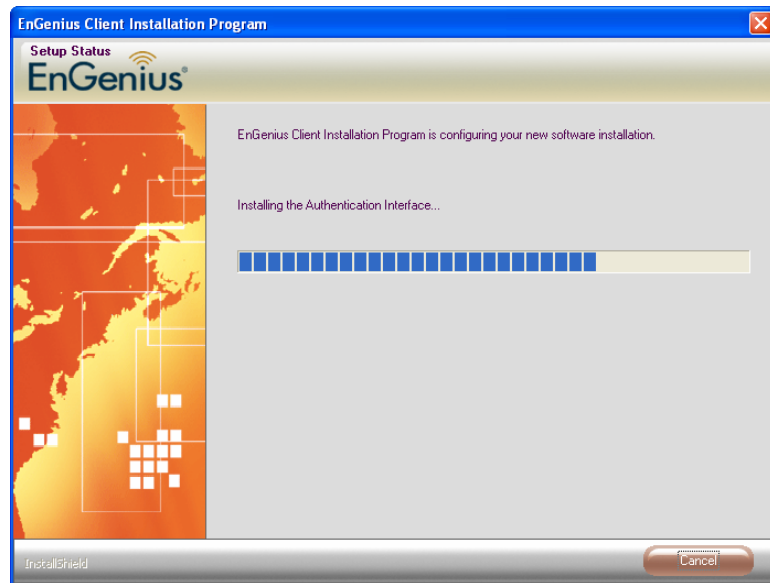Should you agree with terms and conditions mentioned, Click **Next** else click **Cancel** to exit.
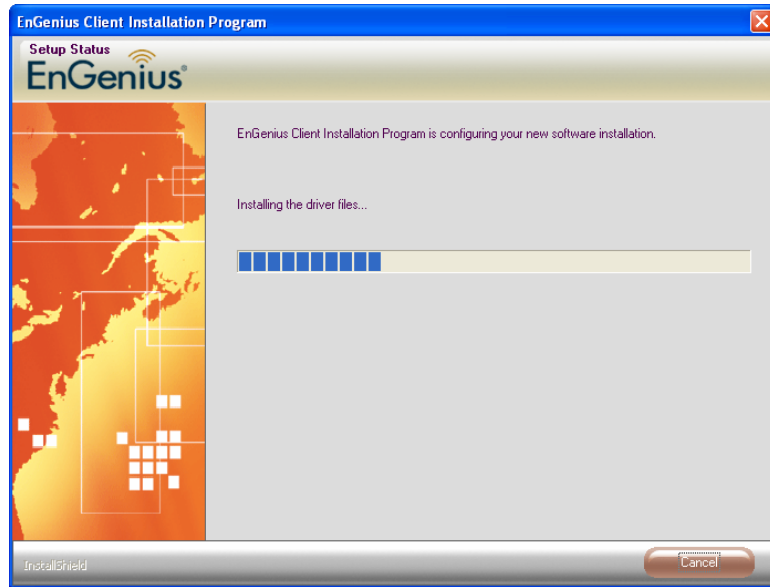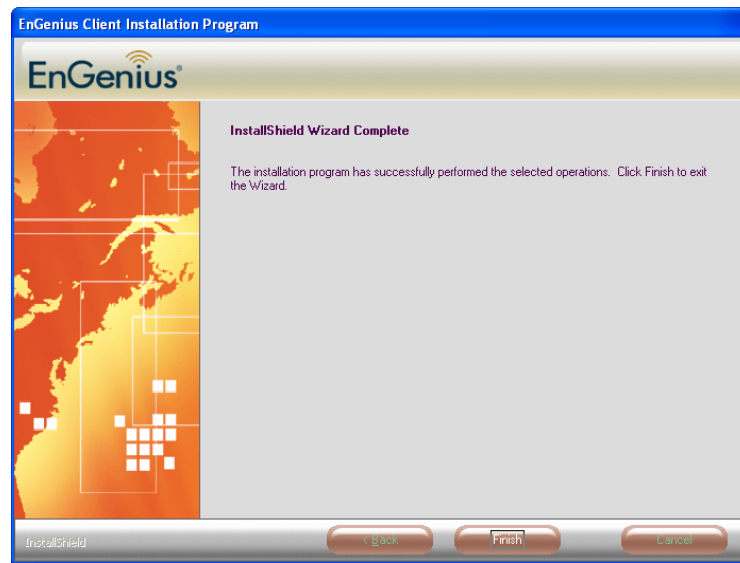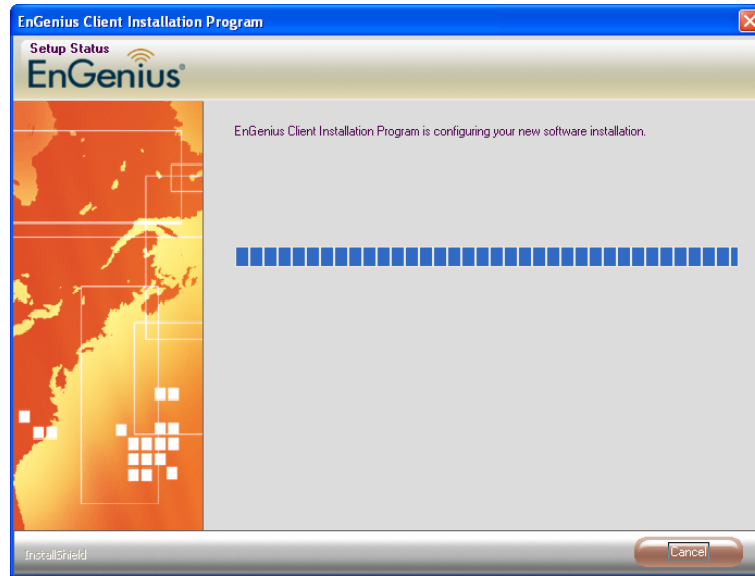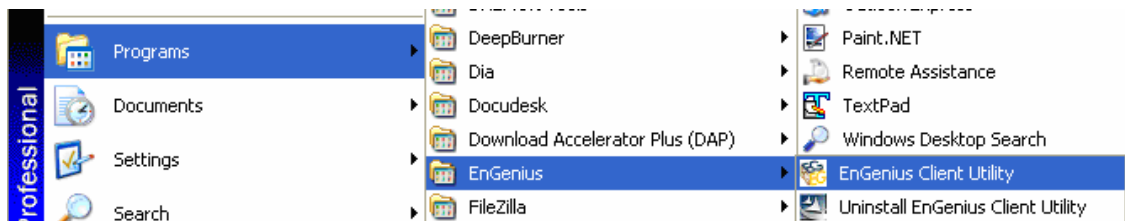
Choose Engenius client Utility & supplicant

Else choose Third-party supplicant & click **Next**.

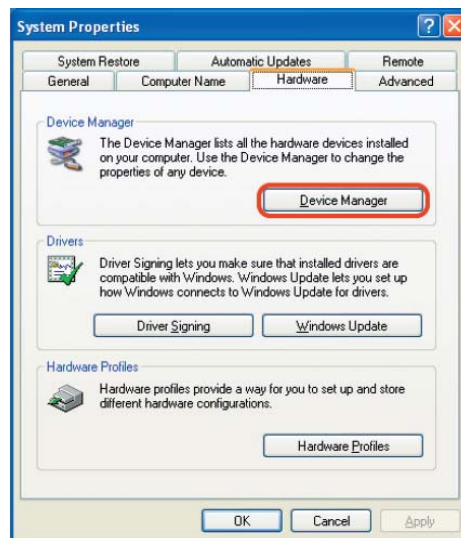Be patient until the installation process is complete.

Find the item in Start menu
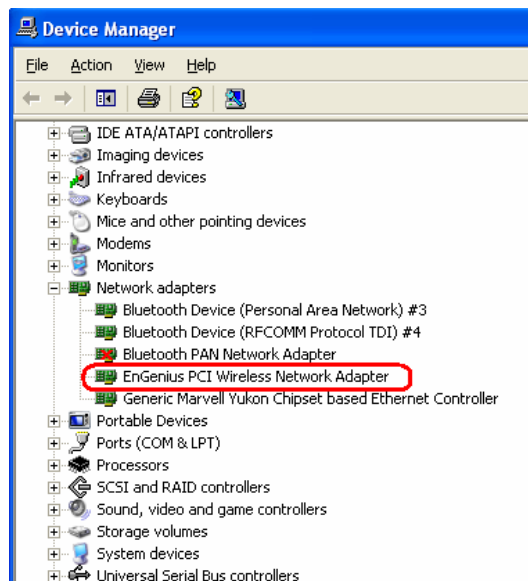
6 Verify installation

Verification involves finding EPI-3601S card in System Properties and checking if the driver is installed correctly.

1. Open [Control Panel] =>Double-click [System].

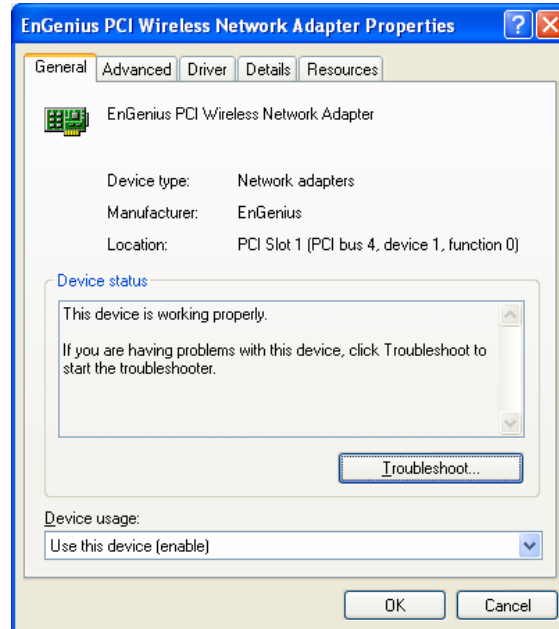2. Select [Hardware] tab=>Click [Device Manager].

Select Network Adapters.

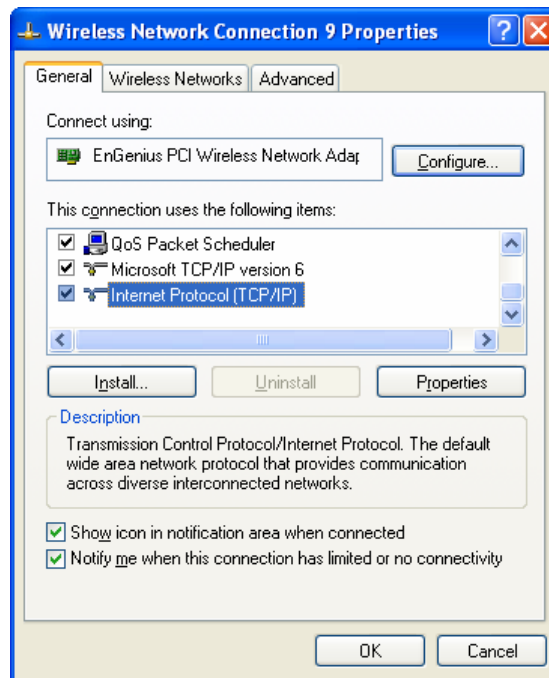Click open [EnGenius PCI wireless Network Adapter]

Verify that the device status of [EnGenius PCI wireless Network Adapter]

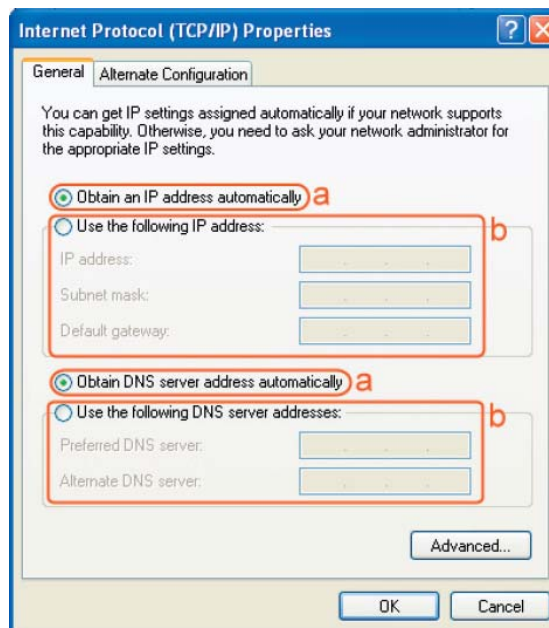[This device is working properly]->Click [OK]

7 Setup Network Configuration (MS WinXP)

- Enter [Start Menu] =>select [Control panel] =>select [Network].

- Right-click [Wireless Network]

- Select [Local Area Connection]) icon=>select [properties]

- Select [Internet Protocol (TCP/IP)] =>Click [Properties].

- Select the [General] tab.

  a. If your Wireless Router supports [DHCP] function, please select both [Obtain an IP address automatically] and [Obtain DNS server address automatically].

b. If the router does not support [DHCP] function, you have to configure the IP and DNS settings.

8 Setup WLAN (EnGenius Client Utility)

Prerequisite:

1. **Your home/office environment should have a wireless LAN Access Point (AP) that is available for your use.**
2. **You should readily have the (security keys) to connect those Wireless LAN Access Points (AP)**

EnGenius Client utility will first automatically link with any Wireless AP if there is no security key required. If the connection is successful, a message will appear on taskbar.

Following steps guides you to initially setup a wireless network connection.

If in case any non secure WLAN access point was found by EnGenius Client Utility, it will have already connected to that AP. Notice the EnGenius Client Utility on taskbar shows connected icon.

Hovering the mouse cursor briefly over EnGenius Utility icon will show status as follows…the current status indicates that **Config utility** has automatically connected to an **Access Point** named **ICN_DLINK_WIFI**. Other details about the connection are shown.


Click **open** EnGenius Client Utility from start menu.

You will see the utility show up as follows. Current Status tab shows information about the **ACTIVE** network connection.
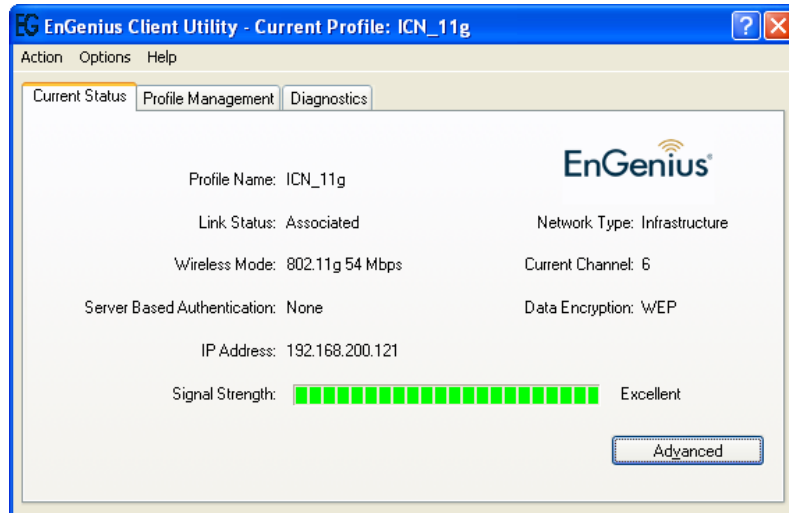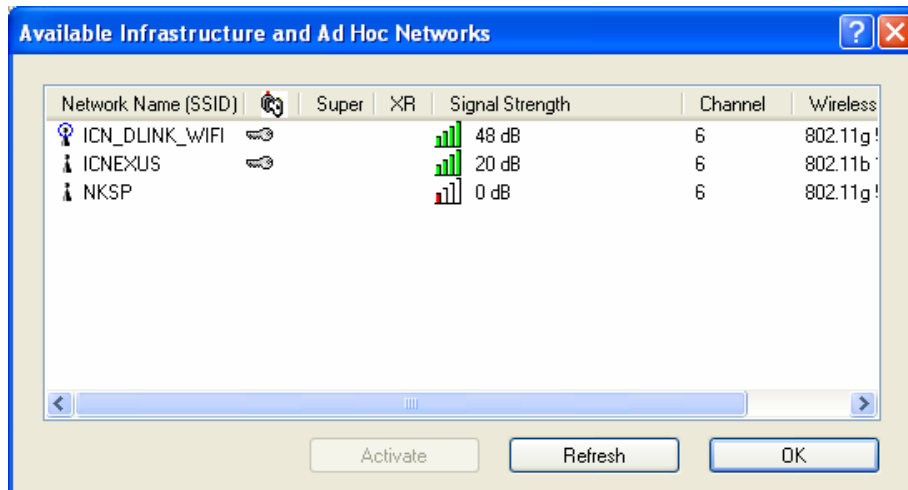

In case there was not any network connection made, it can be manually connected by following the steps listed below.

1. Click open EnGenius Client Utility from start menu.
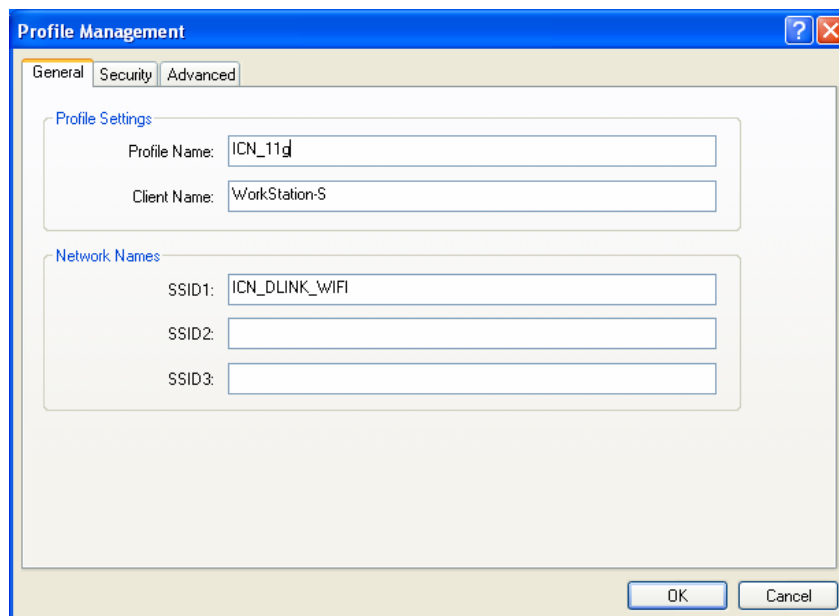2. Click open **Profile Management.**
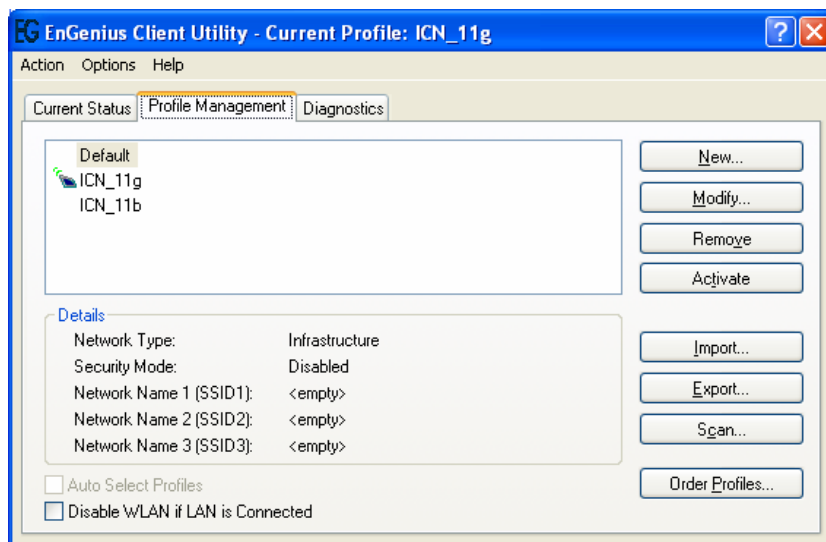
Click Scan. You will see a window showing all available AP that can be detected by EPI-3601S Wireless LAN card.

Click on the SSID that you have security key information or choose an SSID which has no encryption to begin with.
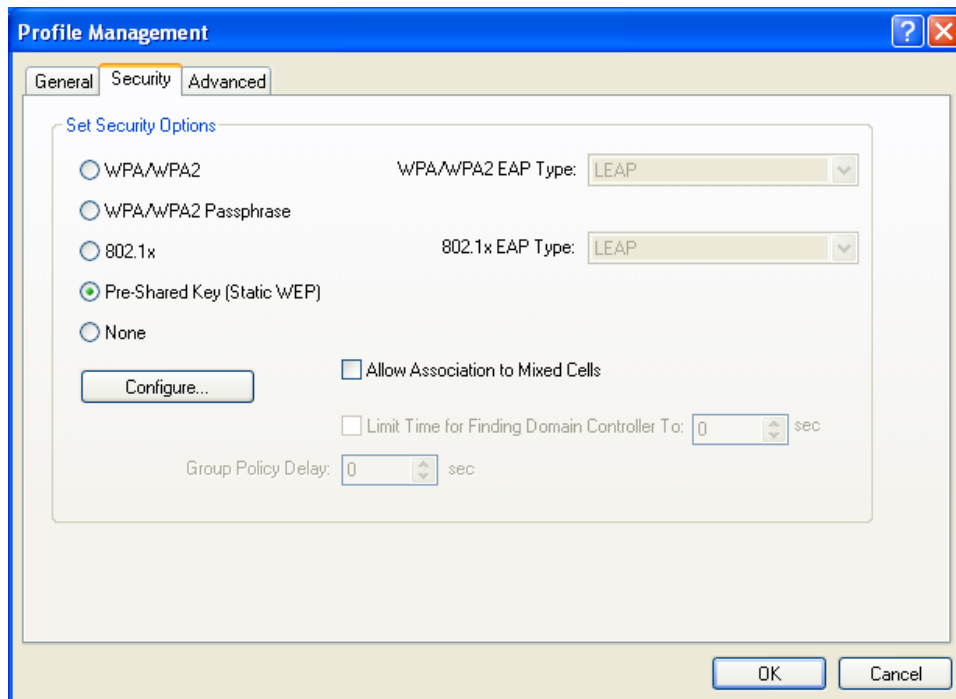
Click **Activate.**

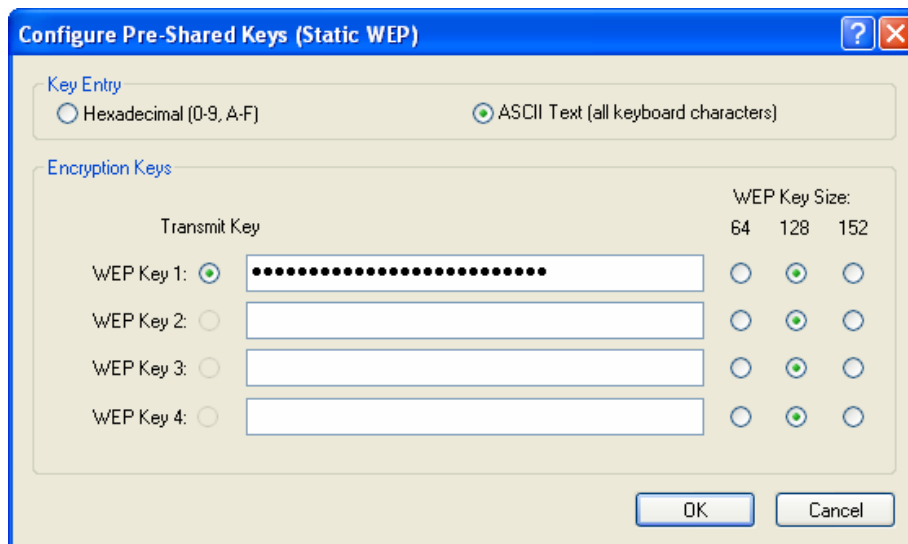Then, automatically **profile management** window pops up as shown below.

Give a profile name that you can recognize later. Fill in the details of SSID,

Click Security tab in case the Access point needs security settings.

Click **Configure.** This Access point for instance is WEP key protected. Therefore the corresponding settings have to be keyed in.

Type the security key information as appropriate. You will need to have this information ready in hand in case this is a protected network. Click **OK** when you are done.

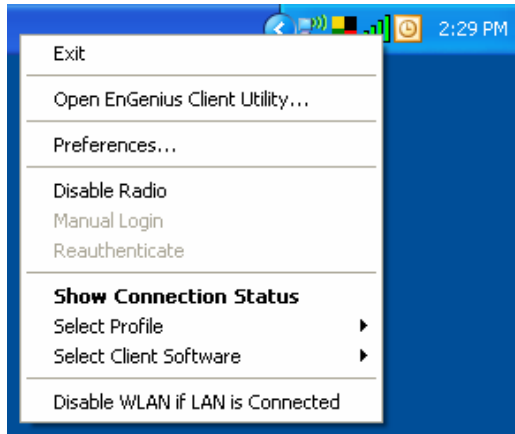Return back to **profile management** tab and click **Advanced** tab. typically you will notice the following.
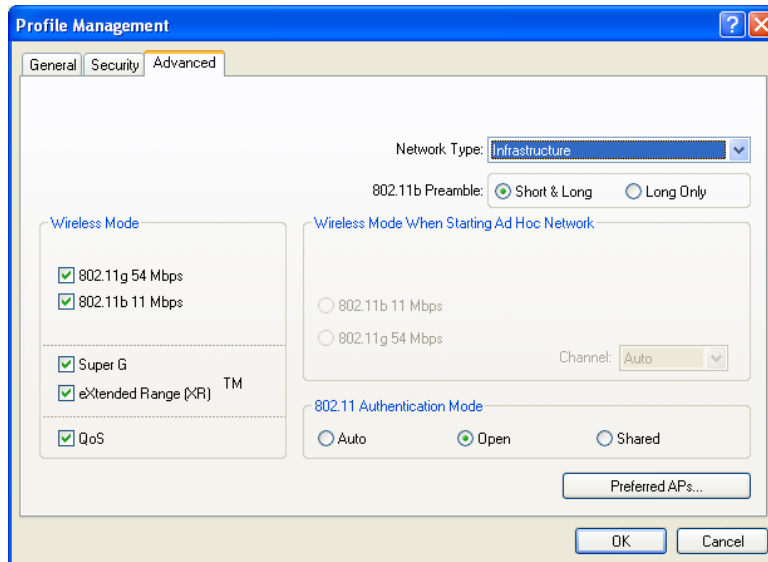
Clicking **OK** will result in connecting to the network directly.
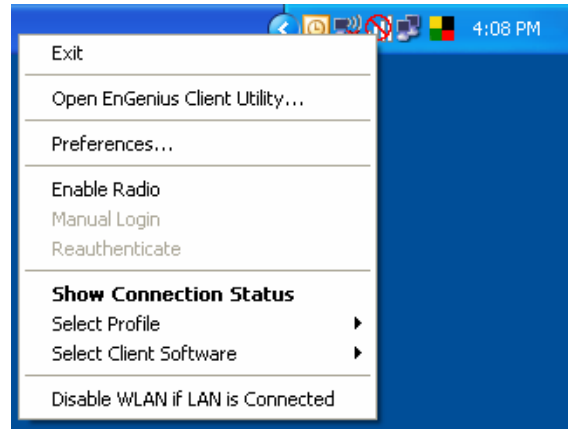
9 System Tray Utility options

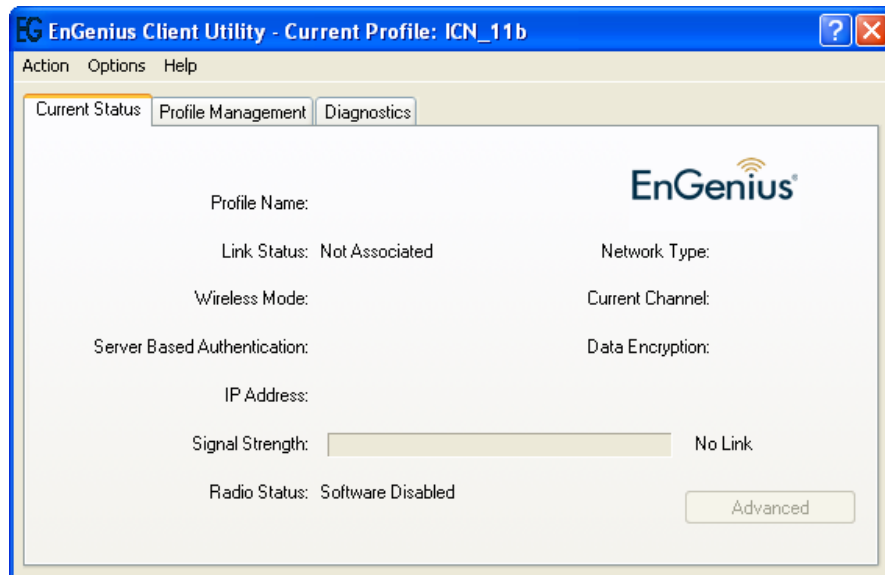Right click on EnGenius utility icon can help do many activities.

Network connected   Network disconnected

Right click options (Radio Enabled)   Right click options (Radio Disabled)

1.   Choose **Exit** to quit EnGenius Client utility.

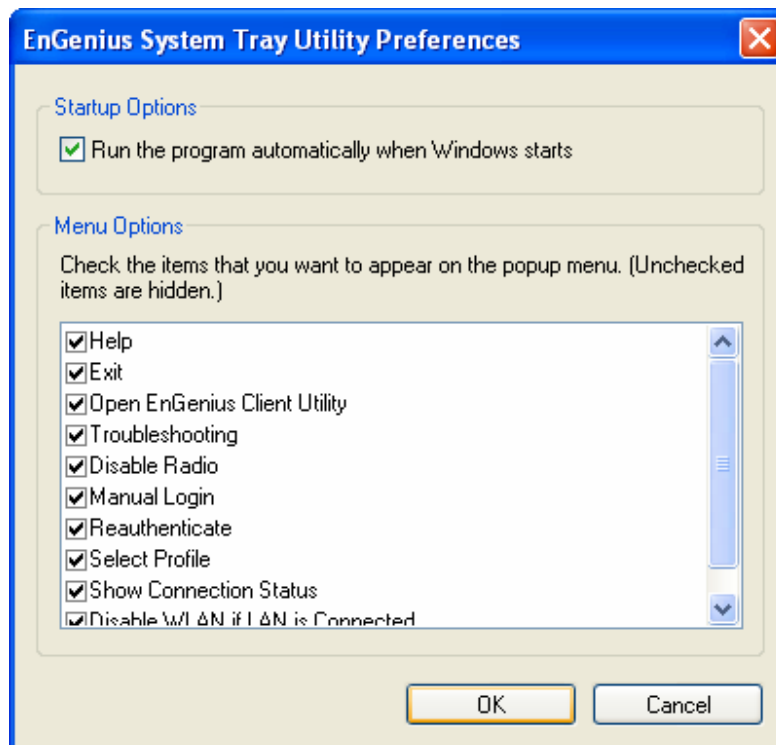2.   Choose **Open EnGenius Client Utility**

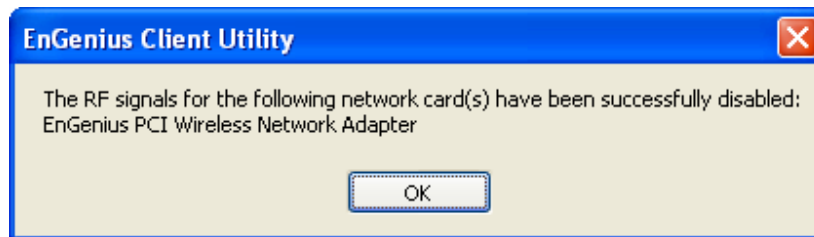If Radio is already disabled, you will see a window as shown below.

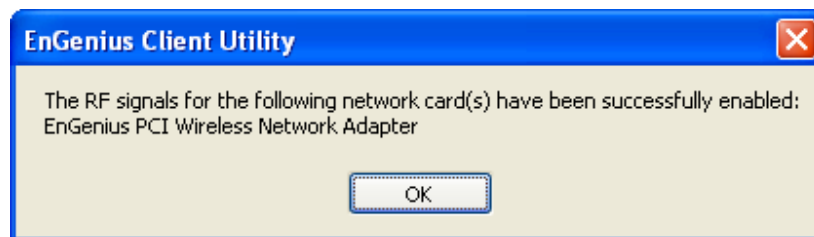If Radio is already enabled, you will see a window as shown below.
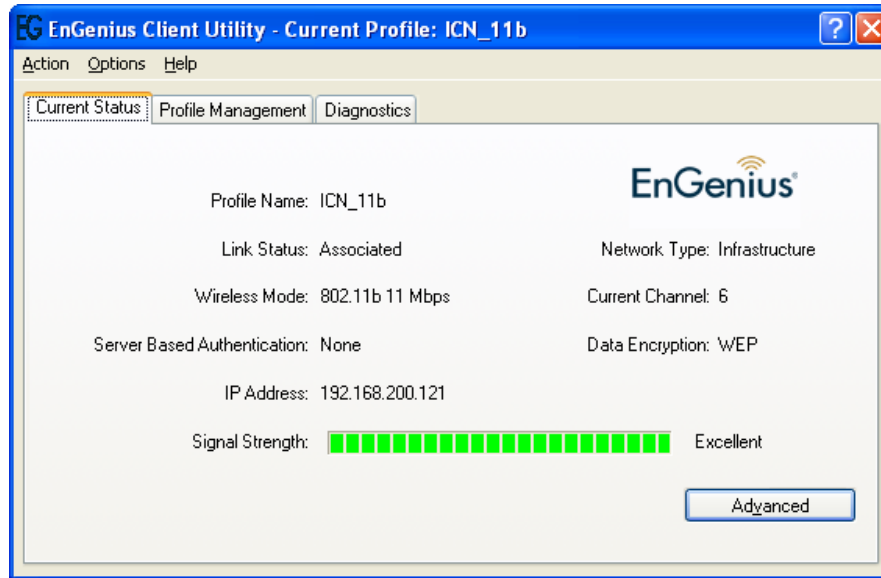
3.   Choose **Preferences**. Check the box to choose whether you want the utility to run when Windows starts.

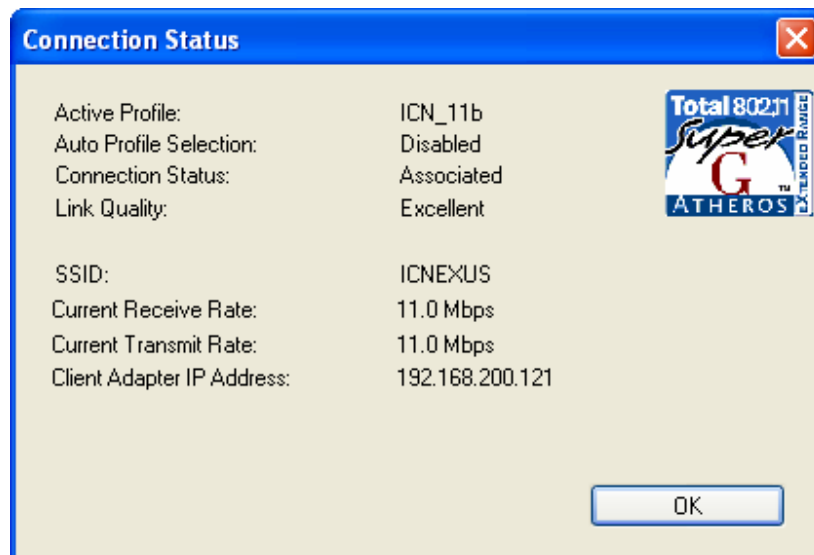4.   Choose **Enable Radio** and notice the message that confirms the same.

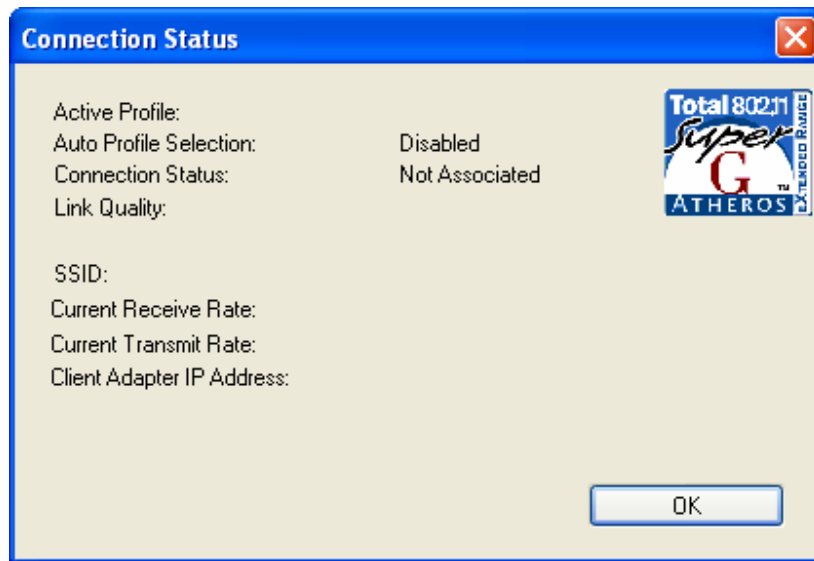5.   Choose **Disable Radio** and notice the message that confirms the same.

6.   Choose **Show Connection Status**

If WLAN adapter is **enabled**, you will notice the following window with network connection information.
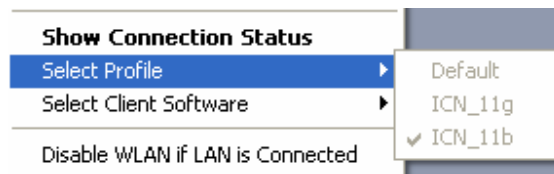

If WLAN adapter is **disabled**, you will notice the following window with disabled network information.
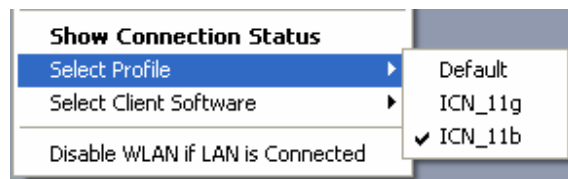
7.   Choose **Select Profile**

        If radio is disabled, grayed out Profile options are shown as below
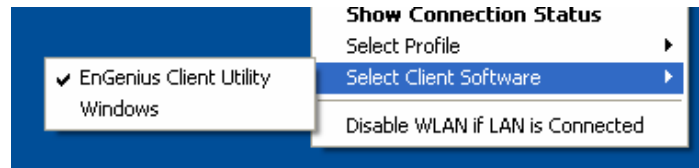

        If radio is enabled, available Profiles are shown as below
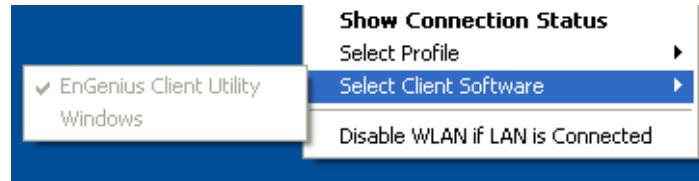

8.   Choose **Select Client Software**

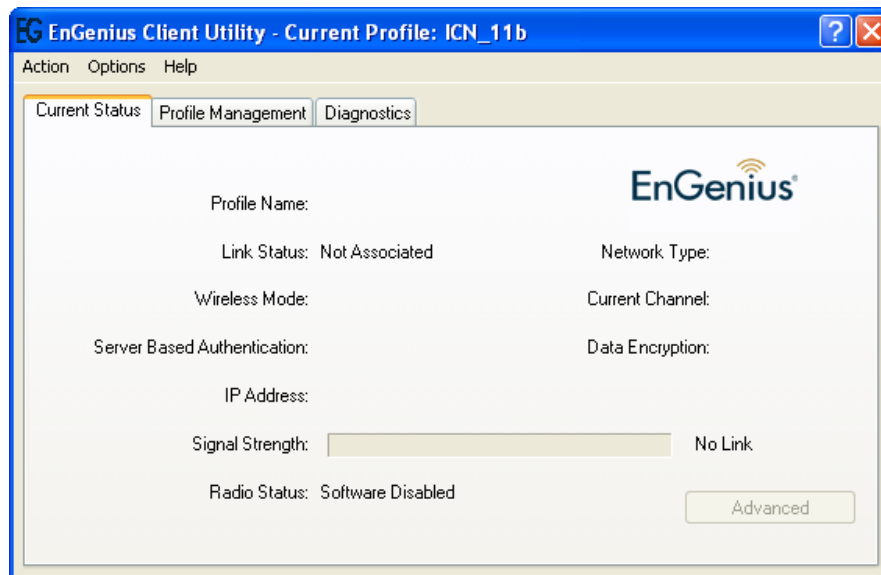   If Radio is enabled, two options are shown as below.

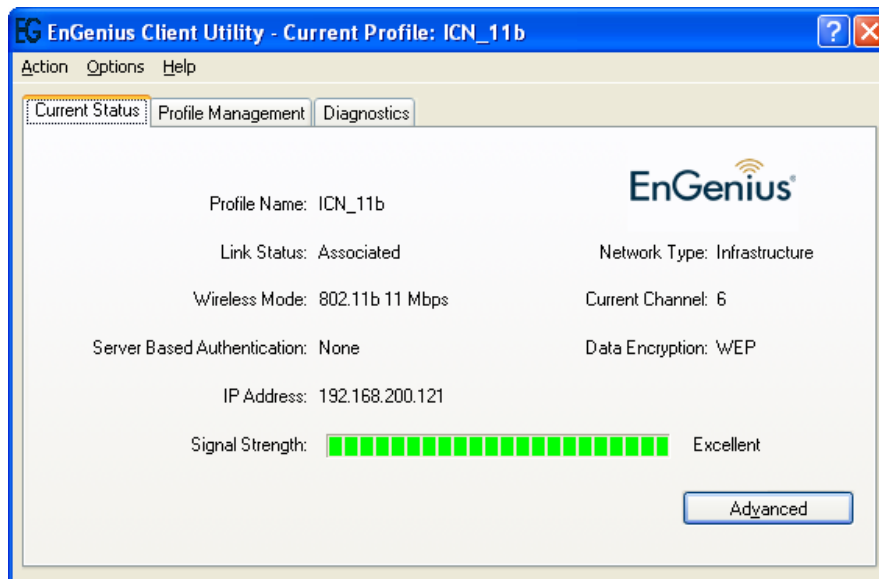If Radio is disabled, two options are shown as below.

9.   Choose **Disable WLAN if LAN is connected.** Immediately, if an active LAN connection is detected, EPI-3601SWLAN adapter is disabled.

10.   Choose **Open EnGenius Client Utility**

If Radio is already disabled, you will see a window as shown below.
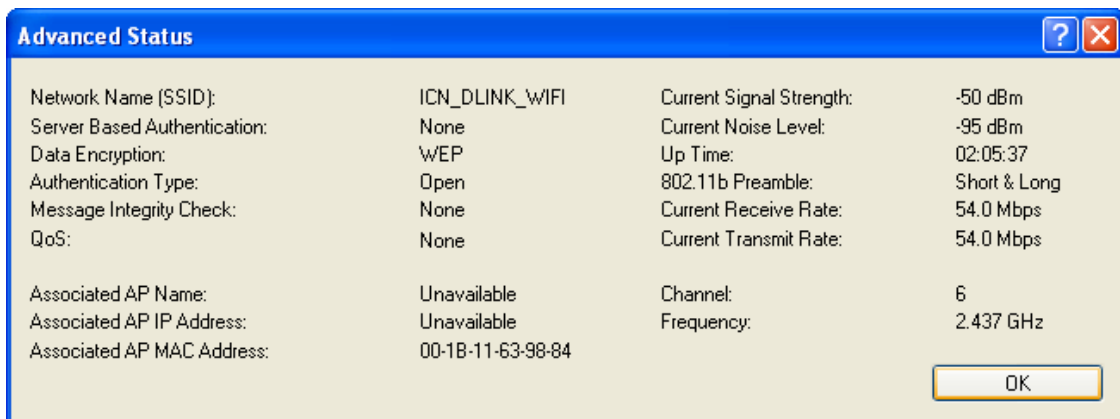

If Radio is already enabled, you will see a window as shown below.

Click **Advanced** to view more information about the current active network connection.
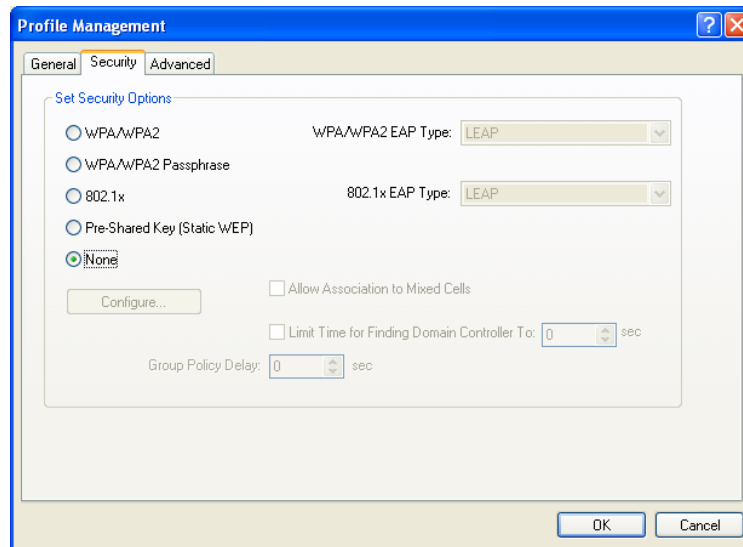
10 Setup Network security (WEP, WPA…)

If your AP/Router has network security key, your wireless adapter needs to have the same security setting. The details of setting up network security are described below. Please open EnGenius Client Utility.
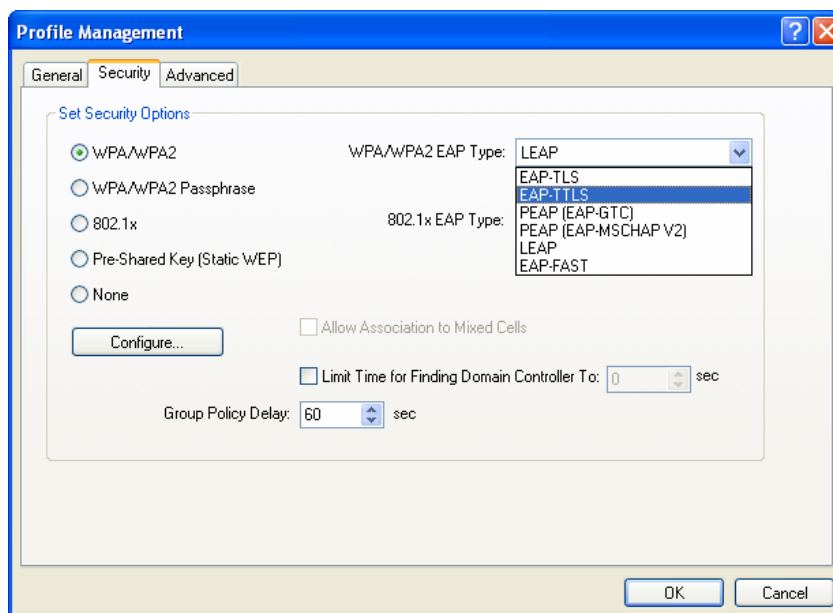
a. None

If AP you want to connect has no encryption settings, just simply click in **Set**
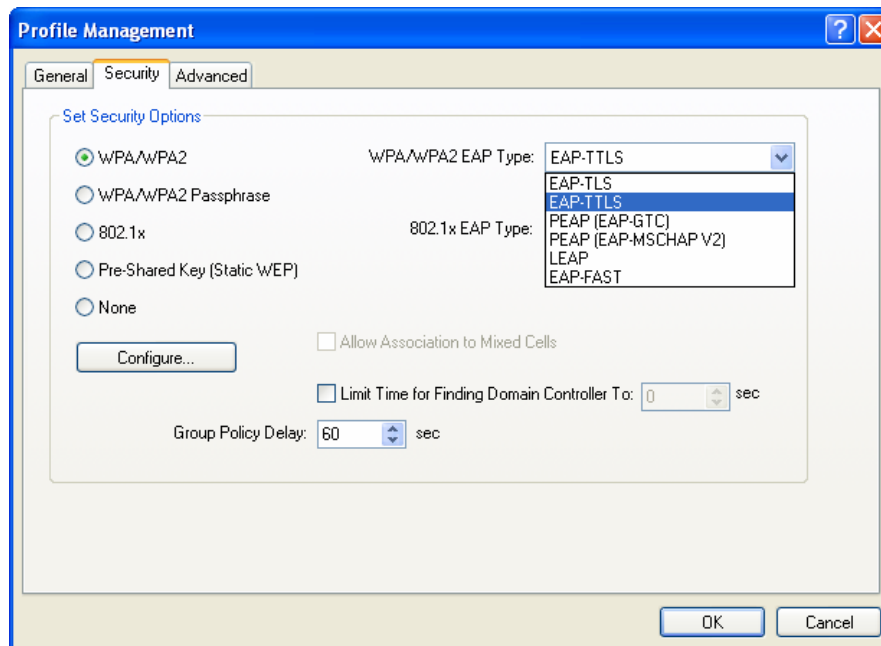
Security Options.

b. WPA/WPA2

1. Select **WPA/WPA2** under **Set Security Options**.
2. Choose the correct **EAP type**.
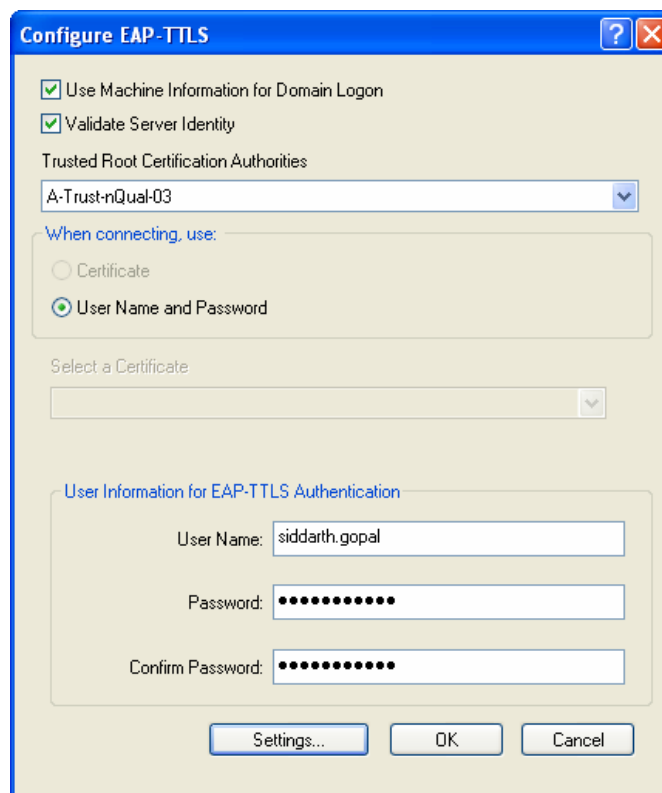

3. Click **Configure**.
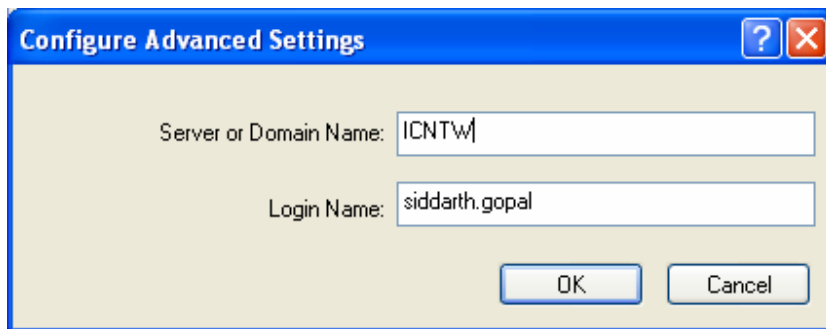
Select the check boxes for **Doman Login** and **Validate Server Identity & choose the Trusted Root Certification Authorities.**
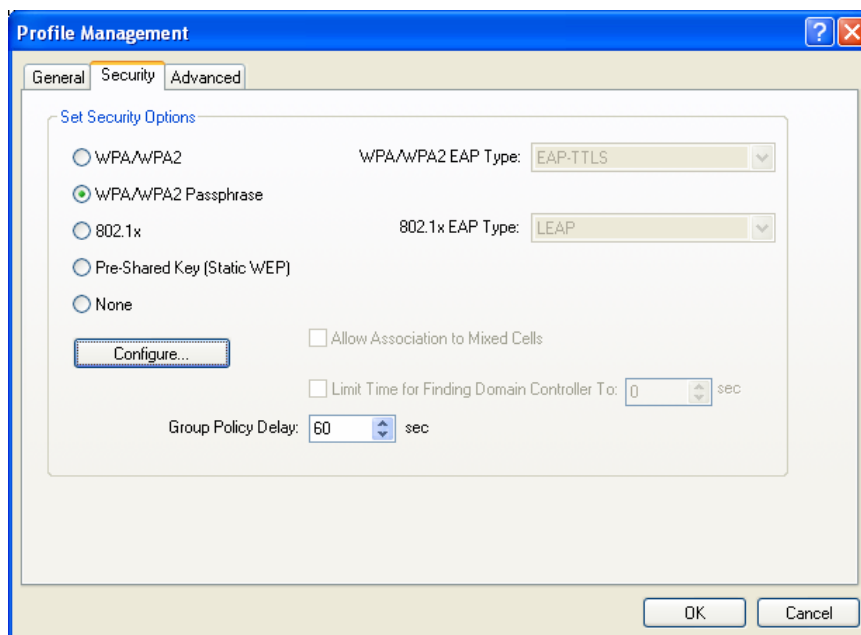
Provide user information for EAP-TTLS authentication.

Click **Settings**.

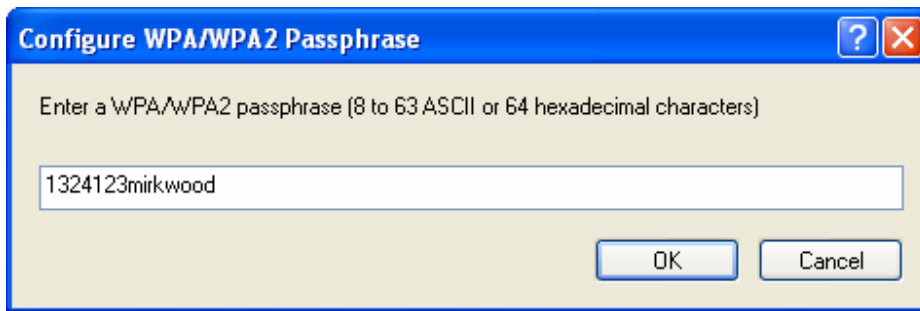

c. WPA/WPA2 passphrase

If AP includes support for passphrase, the following settings need to be done.

In **Security** tab, select WPA/WPA2 passphrase. Click C**onfigure**.

You can find the dialog box requests a passphrase. Key in the correct value.
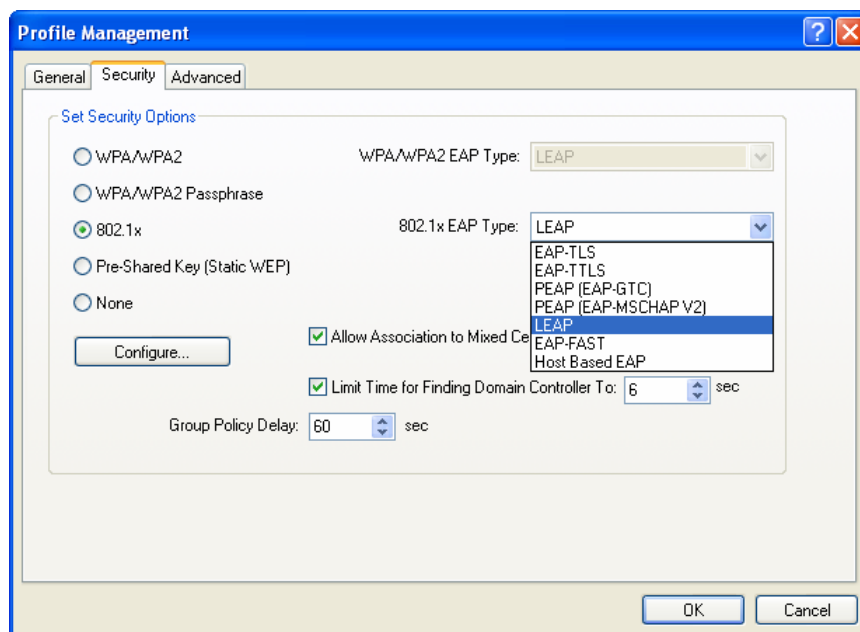
Click **OK**.

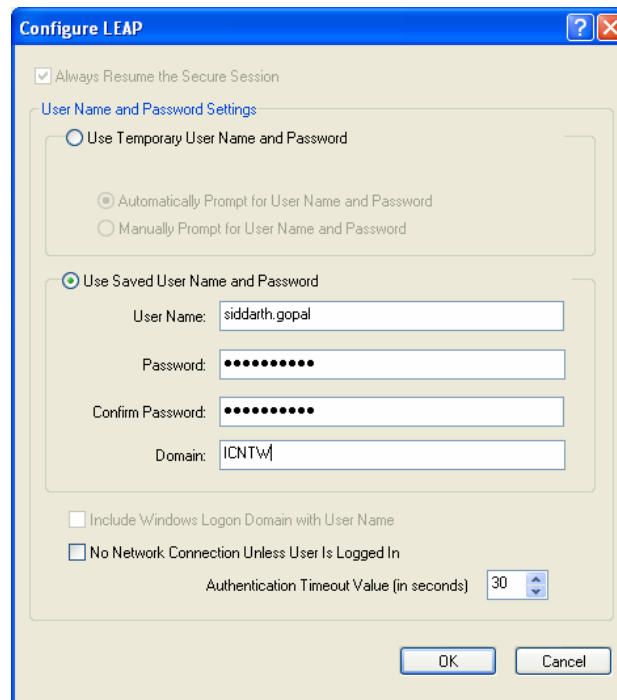The active profile with the security settings is immediately applied.

d. Setting 802.1x

If AP you want to connect to has 802.1x based other type of authentication,

Select **802.1x**. Choose the correct **802.1x EAP type**.

Enable the following check boxes and set the correct value.

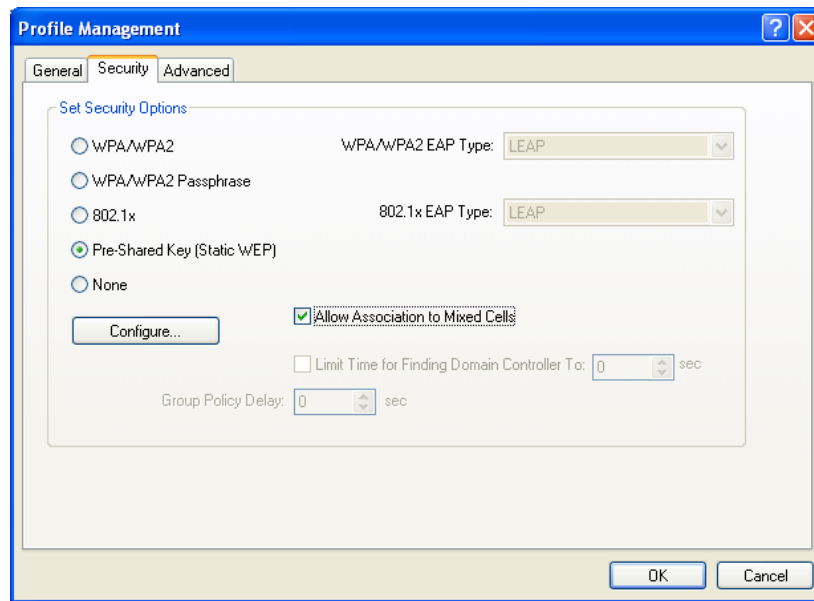Click **Configure** to setup the values of user name and password

Include the correct **Authentication timeout value.**

Enable **No Network Connection Unless User Is Logged In** checkbox if appropriate.
Else choose **User Temproary User Name and password**.
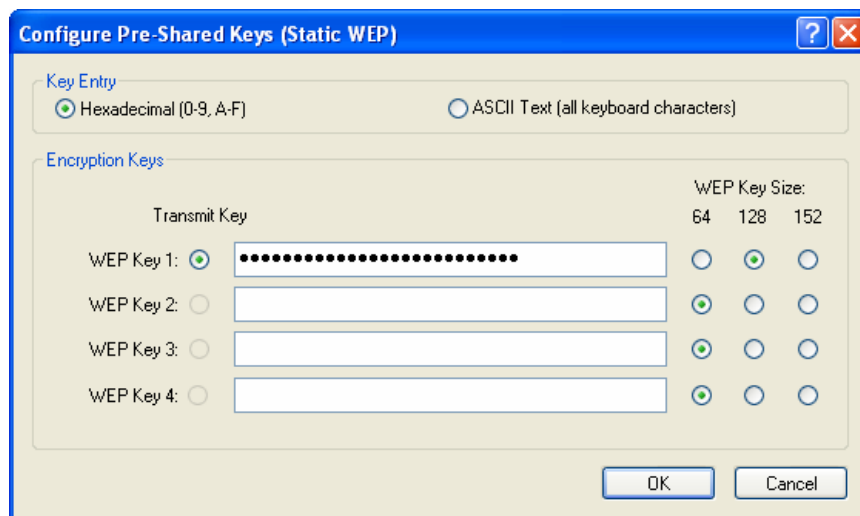
e. Pre-shared key – Static WEP

If Access Point you want to connect to has [WEP] authentication, click the **Security**
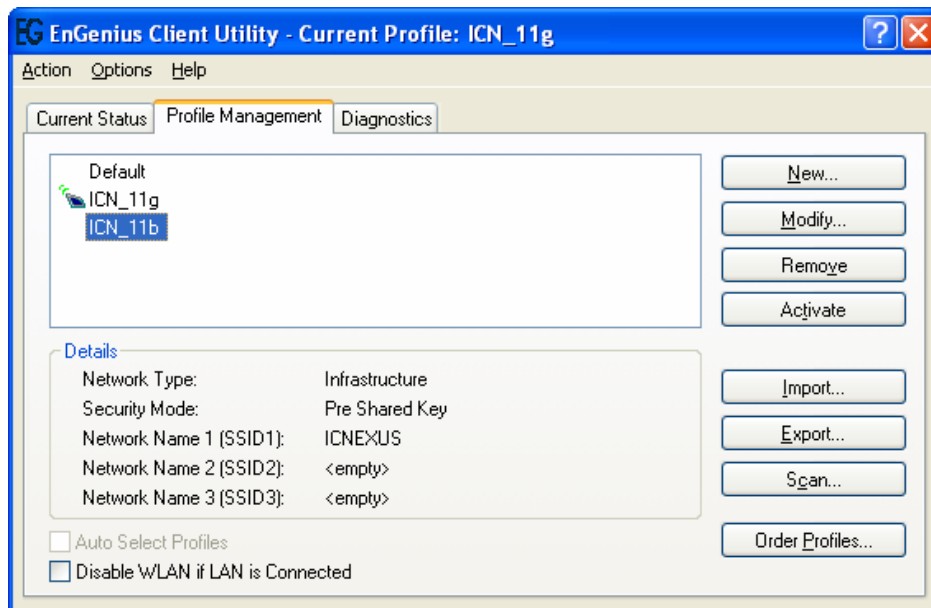tab.

Choose **Pre-Shared Key**.

Enable checkbox related to **Association to Mixed Cells**.

Click **Configure**. Choose the correct **WEP Key Size**. Choose the appropriate

Key entry. Key the values for WEP key.

11 Managing Profiles

Click **Profile Management** tab. Two boxes list the existing profiles and details about

the particular profile.

Choose a **profile**. There are several actions to be done on a profile.

You can remove it by clicking on **remove** button. Those profile settings are no longer available again. That needs to recreate the profile if required.

You can apply the profile by clicking on **Activate** button.

You can modify a profile configuration by clicking on **modify** button.

Adding a new profile is quick by pressing **new** button & including the security details discussed in the previous chapter. Each profile is associated with a SSID of an Access Point therefore all details should be available to create a new profile.
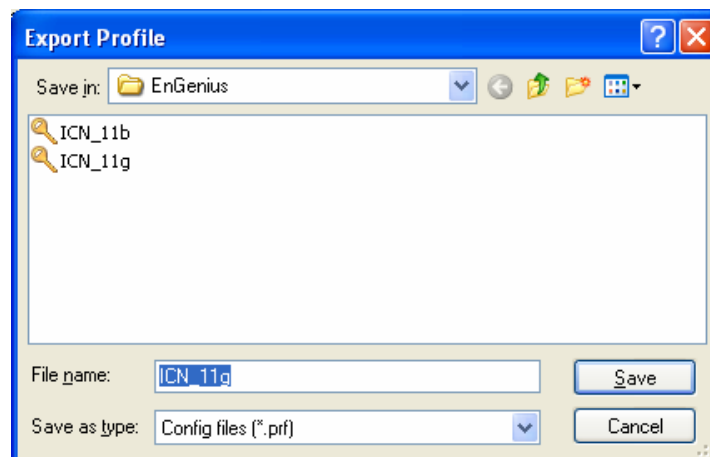
Importing a profile from a previously saved configuration can be done as shown below.
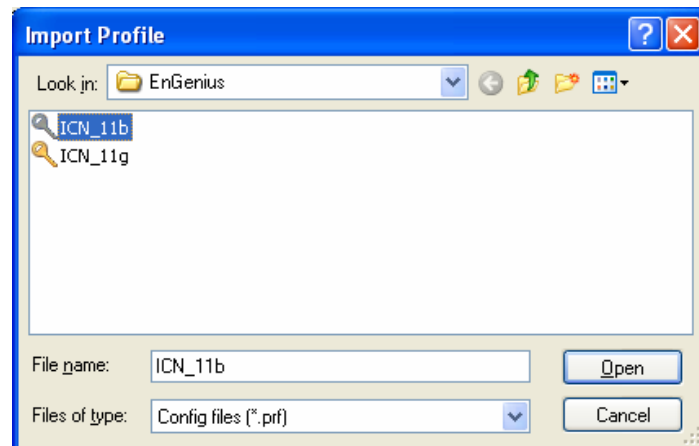
Click on the profile you want to import and choose **OPEN.**

Exporting a profile is similar to importing as shown below. Give an appropriate name and save the currently active configuration.


Auto ordering Profiles

Several profiles can be arranged in a priority or preference based order by clicking the **Order Profiles** tab.

Priority of preference can be changed by using **Move up** & **Move Down** buttons.
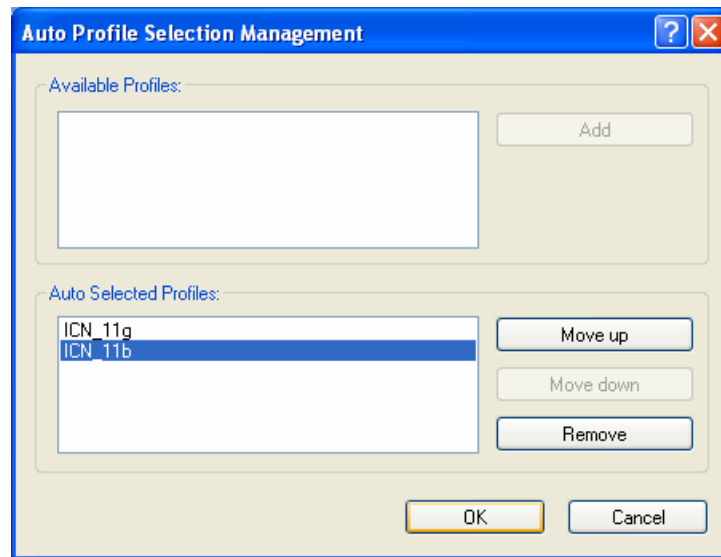
**Power saving by disabling WLAN when LAN is Active**

Enable the checkbox for **Disable WLAN if LAN is connected** and the changes are instantly applied based on whether a LAN connection is active or not.
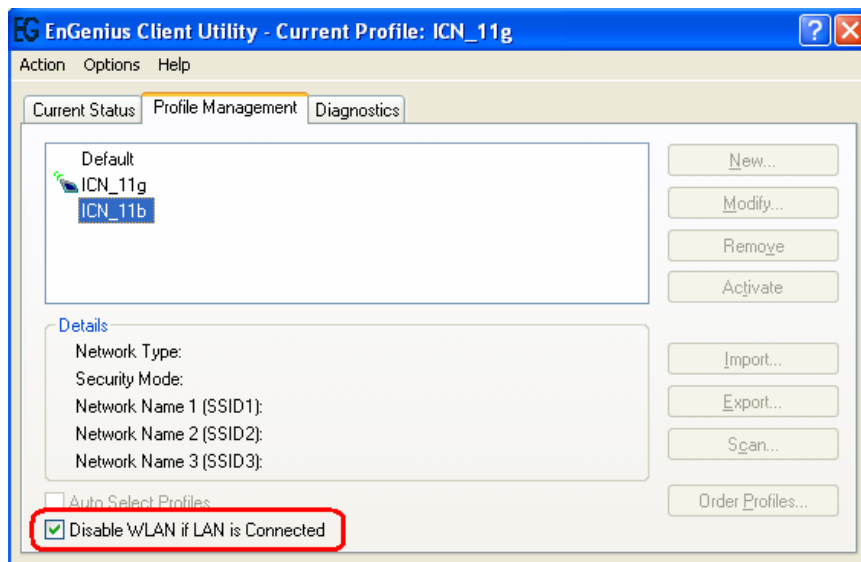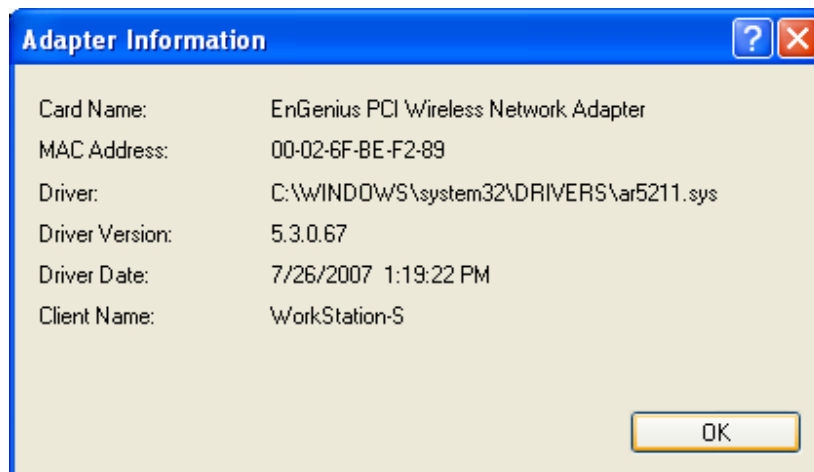

12 Diagnostics

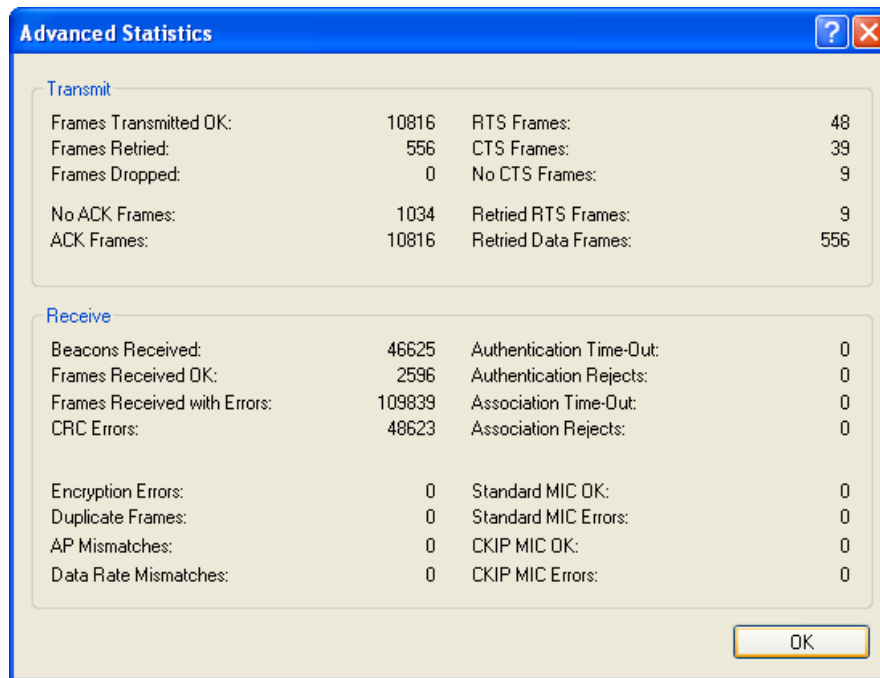A wide range of diagnostics is available in EnGenius Client Utility.

Click **Diagnostics** tab to view the Transmit and Receive information in terms of packet numbers sent /received.
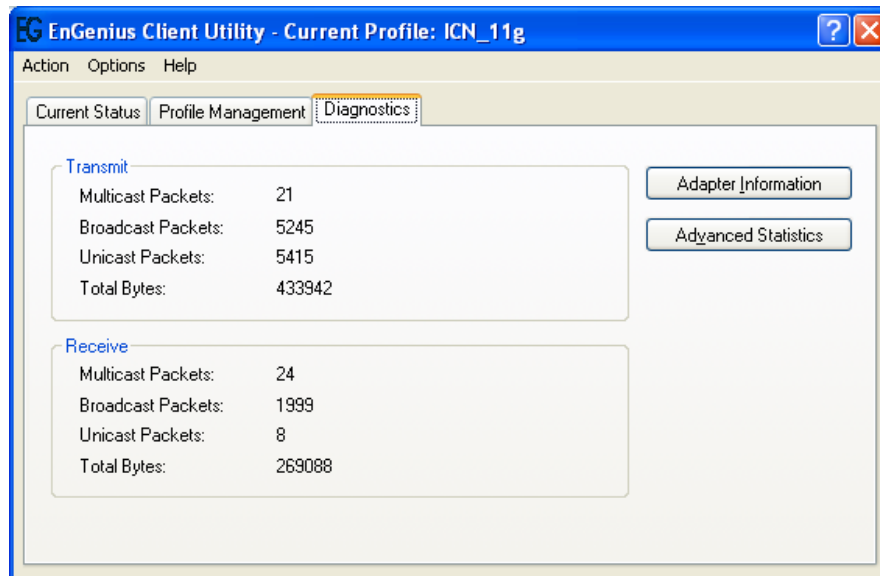
Click **Adapter Information** to get information about the H/W and driver information.

Click on **Advanced Statistics** to get information about very detailed TX/RX information.

13 Menu

The main EnGenius Utility window has 3 menu options to choose from.

Action

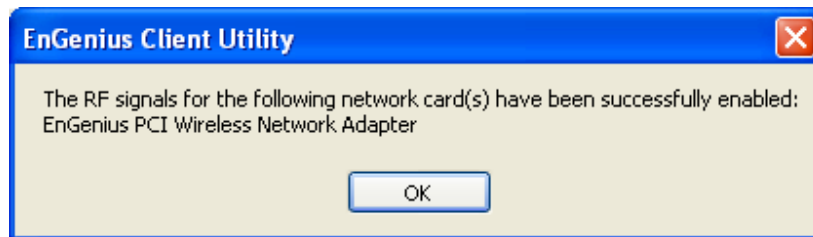Enable/Disable Radio. This is a toggle feature and appropriate response is shown in dialog boxes below
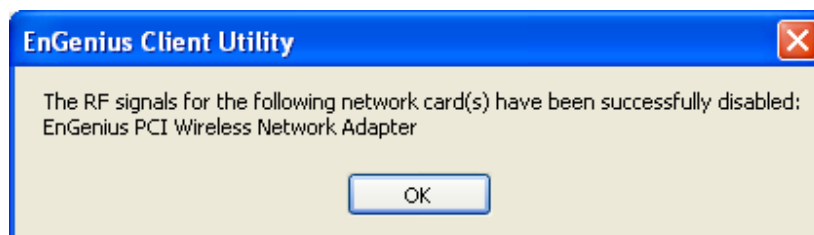
**Enable/Disable Tray icon**

This option enables or disables system tray icon that represents signal strength and provides other configuration options.

Options

Display Settings can be changed from % to db and refresh interval can be changed Along with relative or cumulative change in data display.
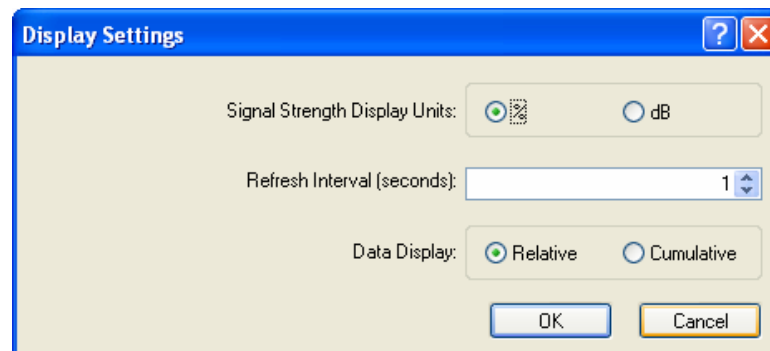
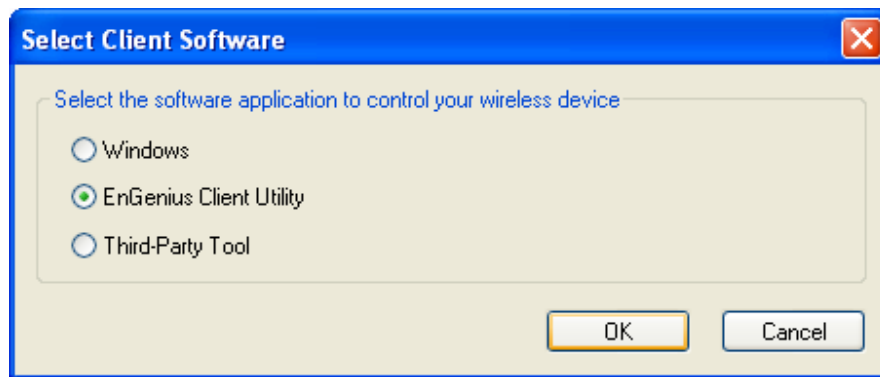Scan List Settings – the items shown during AP scan can be customized using the following options
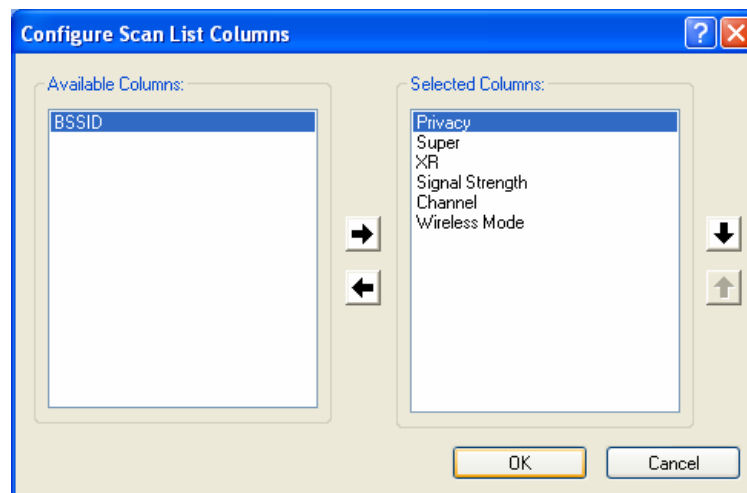
Select Client Software – choose the utility to control the EPI-3601S Wireless LAN PCI adapter.

WZC and EnGenius and third-party tools are the options available.

Help

About
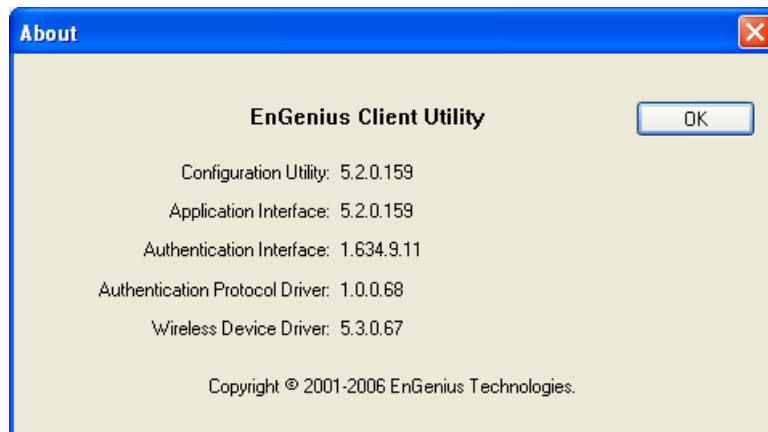
14 Uninstalling EnGenius Utility/Driver

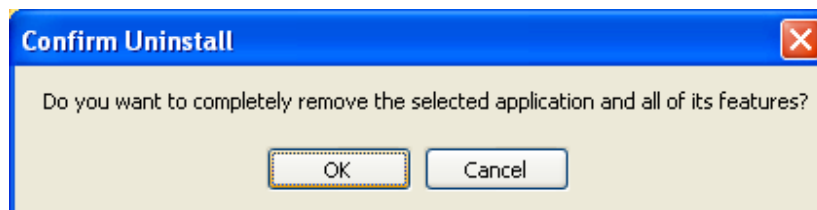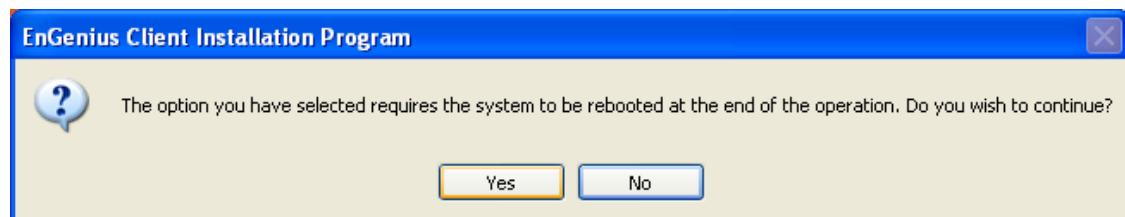Select Uninstall option from the start menu.

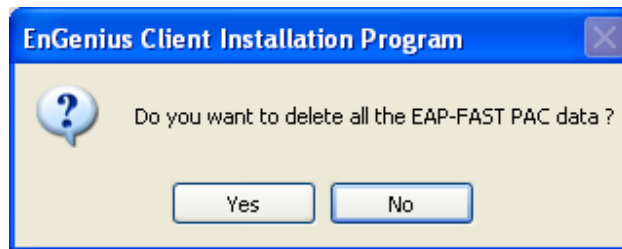You can see the wizard preparing for uninstallation
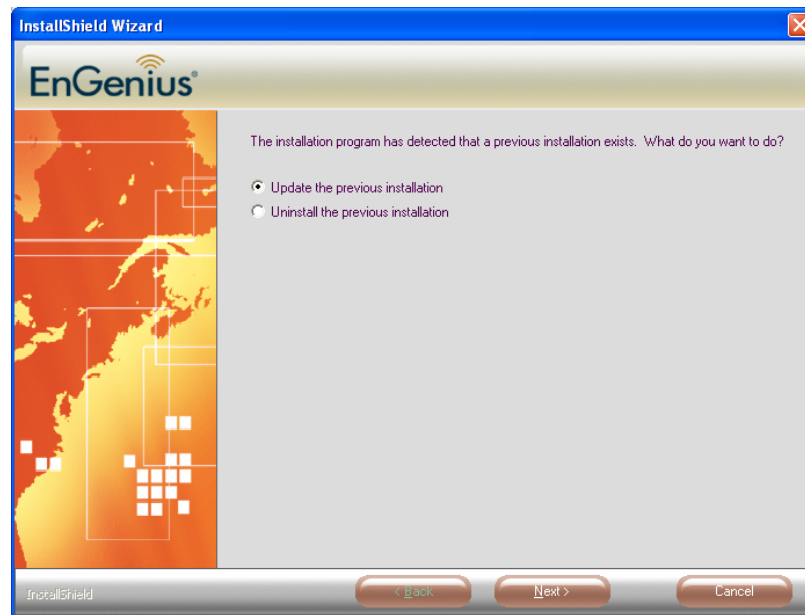
Select **Uninstall the previous installation**. Click **Next**.
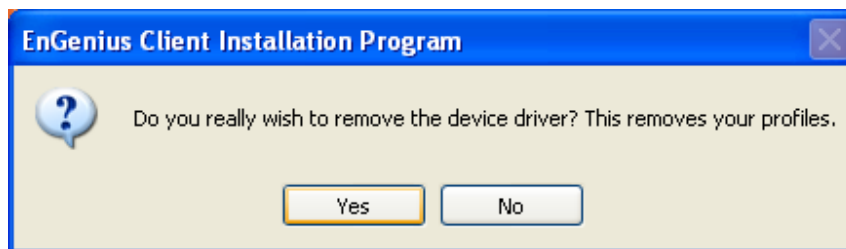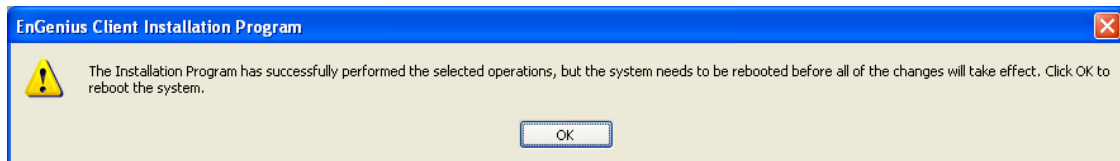

Select **OK.**

Select **OK.** Rebooting ensures clean uninstall.

Click **Yes.** If you want to keep it so that you can use it later, select **no.**

Choose to keep or remove the device driver files.

Choosing **OK** will reboot PC.

Appendix A – Specifications

Data Rates

802.11g: 6, 9, 12, 18, 24, 36, 48, 54, 72 and 108Mbps

802.11b: 1, 2, 5.5, 11Mbps

Standards / Compliance

IEEE802.11, IEEE802.11g, IEEE802.11b

Regulation Certifications

FCC Part 15.247, ETSI 300/328/CE

Drivers

Windows 2000/XP/Vista

Current consumption

Tx Current ≦ 685mA (Full transmit)

Rx Current ≦ 515mA (Full transmit)

Range Coverage

Indoor: 600 meters (depends on environment)

Outdoor: 1500 meters (depends on environment)

RF Information

Frequency Band

2.412～2.472GHz

Media Access Protocol

Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)

Modulation Technology

802.11g:
OFDM (64-QAM, 16-QAM, QPSK, BPSK)
802.11b:
DSSS (DBPSK, DQPSK, CCK)

Operating Channels

11 for North America, 13 for Europe

Roaming

Full mobility and seamless roaming from cell to cell

Available transmit power

Receive Sensitivity (Typical)

802.11g:
-90 dBm @ 6Mbps,
-74 dBm @ 54Mbp
802.11b:
-95 dBm @ 1Mbps
-90 dBm @ 11Mbps

Available transmit power (Typical)

● 2.412~2.472 GHz (IEEE802.11g)

    26 @6~24Mbps

    24 @ 36Mbps

    23 @ 48Mbps

    22 @ 54Mbps

● 2.412~2.462 GHz (IEEE802.11b)

    27 dBm @1~11Mbps

Networking

Topology

Ad-Hoc, Infrastructure

Security

IEEE802.1x

64/128/152-bit WEP encryption

WPA-PSK/WPA2

TKIP/AES

Physical

Form Factor

32-bit PCI interface

Dimensions (LxWxH)

5.2 × 4.8 × 0.9in.(133 × 121 × 22mm)

Environmental

Temperature Range

Operating Temperature: 0℃~40℃ (32℉~104℉)
Storage Temperature: -40~70℃ (-40℉~158℉)

Humidity (non-condensing)

Operating Humidity: 10%~90% non-condensing
Storage Humidity: 5%~95% non-condensing